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# Study of the Sale or Lease of the State's Excess Broadband Capacity, 2009

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January 15, 2009

Honorable Barry J. Hobbins, Senate Chair
Honorable Jon Hinck, House Chair
Joint Standing Committee on Utilities and Energy
Augusta, Maine 04333

Re: L.D. 2292, Resolve, To Establish a Stakeholder Group To Study the Sale or Lease of the State's Excess Broadband Capacity.

Dear Senator Hobbins and Representative Hinck:

L.D. 2292 would have directed the Governor's Office of Energy Independence and Security to establish a stakeholder group to study the potential sale or lease of excess broadband capacity owned by the State or through the University of Maine System. The Utilities and Energy Committee (Committee) voted ought not to pass (ONTP) on the bill. However, it requested through a letter to the Executive Director of the ConnectME Authority dated April 14, 2008, that the Authority convene a stakeholder group to examine the issues presented in Section 2 of the bill and to provide the Committee with a summary of the findings and recommendations of the stakeholder group.

Section 2 of L.D. 2292 says:

**Sec. 2. Duties. Resolved:** That the stakeholder group under section 1 shall:

1. Review and identify the financial implications of the transition from analog broadcasting to digital broadcasting and review the Federal Communications Commission's decision to allow certain institutions that hold licenses for frequencies used to broadcast broadband signals to sell the generation of excess broadband capacity, since the space occupied by one analog channel can be occupied by several digital channels;

2. Explore the potential of selling or leasing the State's and the University of Maine System's excess broadband capacity when the analog channels become digital channels;

3. Review what other states and educational systems have done in this situation in order to find ways to save the state budget allocations from the

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General Fund and to see how these types of savings can be done on a statewide basis. The stakeholder group shall pay particular attention to the Milwaukee, Wisconsin educational system's sale of broadband valued at $12,600,000, with estimated additional earnings of $108,000,000; and

4. Investigate the University of Maine System's plans to negotiate a contract for its excess broadband capacity.

The Executive Director of the ConnectME Authority contacted a number of interested parties and formed a stakeholders group to examine the issues as requested. The group decided not to include vendors or potential bidders to avoid issues of conflicts of interest, unfair advantage, or bias. The stakeholders group consisted of the following members:

- Representative Cynthia Dill. Maine House of Representatives
- Senator Barry Hobbins. Maine Senate
- Phillip Lindley, Executive Director, ConnectME Authority
- Richard Thompson, Chief Information Officer, State of Maine
- Ralph Caruso, Chief Information Officer, University of Maine System
- John Forker, Director - Academic and End-User Technologies, University of Maine System
- Jeffrey Letourneau, Assoc. Dir.- Communications and Network Services, Univ. of Maine System
- Mitchell Davis, Chief Information Officer, Bowdoin College, member of the ConnectME Authority
- Amy Spelke, Utilities Analyst, Maine Public Utilities Commission
- Richard Davies, Maine Public Advocate

The stakeholders group convened on the following dates: June 13, 2008; July 2, 2008; July 31, 2008; September 10, 2008; and October 1, 2008.

**Background of Educational Broadband Service (EBS) in Maine**

UMS ITV & EBS. The University of Maine System has operated and maintained an Instructional Television (ITV) network using licensed Educational Broadband Service (EBS), formerly the Instruction Television Fixed Service (ITFS) channels, since 1989. The ITV network delivers more than 90 live, televised courses per semester, providing rural Mainers access to higher education degree programs. The ten studio classrooms, located on eight of the University's campuses, originate high-quality, one-way video, and are configured for students at distant locations to interact via toll-free or IP (internet protocol) telephone. From 7:00am to 10:00pm, the University simultaneously broadcasts four channels of programming throughout the state reaching nineteen University locations via landline and approximately 50 contracted adult learning centers via EBS. Students earn more than 22,000 credit hours per year taking ITV courses.

FCC Rules. The Federal Communications Commission licenses EBS spectrum only to educational institutions. Licensees are required to provide 20 hours of educational

content per week on all licensed channels. Excess capacity may be leased to commercial entities for other uses such as WiMAX services. The FCC mandated that EBS licensees move to a new band plan, which requires the use of digital transmissions. Commercial or private company proponents of a transition plan have until January, 21, 2009, to submit a plan to transition all licenses within a Basic Trading Area (BTA) at the proponent's expense. If a proponent has not come forth by January 21, a licensee (i.e. the UMS) has until April 21, 2009 to provide the FCC notice of self-transition. All self-transitions must be complete by October 20, 2010. Maine is divided into five basic trading areas. The operations in the Portland/Brunswick Basic Trading Area (BTA #357) have been transitioned by a proponent, Sprint.

| Maine Basic Trading Areas | | | |
|---|---|---|---|
| **BTA** | **Counties** | **UMS transmitter location** -- center of 35 mile radius licensed Geographic Service Area (GSA) -- and respective Channel Group | **Status** |
| 357 | York, Cumberland, Sagadahoc, Lincoln | Portland (B), York (D), Sebago G) | Transitioned by Sprint |
| 30 | Penobscot, Piscataquis, Knox, Waldo, Hancock, Washington | Camden (D), Charleston (G), East Eddington (D), Lincoln (B), Dixmont (C), Greenville (A), Blue Hill (A), E Machias (G), Cooper (A) , Topsfield (D) | Not transitioned |
| 363 | Aroostook | Presque Isle (B), Presque Isle (G), Smyrna (C),Bridgewater (A), Fort Kent (A), Stockholm (C), | Not transitioned |
| 465 | Somerset, Kennebec | Vassalboro, (B), Litchfield (A), Augusta (G) | Not transitioned |
| 251 | Franklin, Oxford, Androscoggin, Coos, NH | Lewiston (C), New Sharon (C), Carrabassett (A), Buckfield (D) | Not transitioned |

Digital Efficiencies. The current UMS analog ITV transmissions use 6 MHz of EBS spectrum per channel of programming. Following conversion to digital transmissions, ITV could operate in one-fourth of the available spectrum, that part identified by the FCC as the middle band segment (Channels A4, B4, C4, D4, and G4). This would fulfill the need to deliver educational content over EBS as prescribed by the FCC. The frequency spectrum in the upper and lower band segments would be available for other uses including leasing to private entities. Specifically, channels: A1, A2, A3, B1, B2, B3, C1, C2, C3, D1, D2, D3, G1, G2, and G3 would be available in the respective areas where the licenses are held.

First Lease Attempt. Although no proponents have come forth to transition the remaining four BTAs, four companies initially expressed interest in leasing excess capacity. Leasing capacity offered the potential for a lessee to transition the BTAs and would secure revenue for self-transition if needed. The UMS issued a request for proposals (RFP) in October 2007. The most favorable bid was from Sprint/Nextel for five of the licenses. Negotiations with Sprint began in January 2008, but were terminated by Sprint in April. In May, Sprint and Clearwire announced that Sprint and Clearwire will merge WiMAX businesses with investments from Intel, Google, Comcast, Time Warner Cable, and Bright House Networks, to form a new company under the Clearwire name. The UMS will continue to seek a lessee and a means to transition.

**Specific Reponses to Issues Presented in L.D. 2292, Section 2**.

*1. Review and identify the financial implications of the transition from analog broadcasting to digital broadcasting and review the Federal Communications Commission's decision to allow certain institutions that hold licenses for frequencies used to broadcast broadband signals to sell the generation of excess broadband capacity, since the space occupied by one analog channel can be occupied by several digital channels.*

Response:

The University must provide educational content over the EBS licensed spectrum in order to retain the licenses and the ability to lease excess capacity to generate revenue and expand broadband opportunities in Maine. Based on vendor quotes for equipment and labor, the UMS estimates that it would cost $2M to transition the current ITV network to digital transmissions. The UMS is exploring other options to determine if there is a lower cost alternative.

FCC rules on spectrum leasing are readily available on an FCC web site. The text on this site - http://wireless.fcc.gov/services/index.htm?job=licensing_1&id=ebs_brs states the following:

> EBS licensees are permitted to lease their excess capacity spectrum, subject to the rules adopted in the Secondary Markets Report and Order. In the Secondary Markets Report and Order, the Commission took important first steps to facilitate significantly broader access to valuable spectrum resources by enabling a wide array of facilities-based providers of broadband and other communications services to enter into spectrum leasing arrangements with Wireless Radio Service licensees. These flexible policies continue our evolution toward greater reliance on the marketplace to expand the scope of available wireless services and devices, leading to more efficient and dynamic use of the important spectrum resource to the ultimate benefit of consumers throughout the country.
>
> Our Secondary Market rules limit spectrum leasing arrangements to the length of the license term. However, EBS leases entered into under our pre-existing ITFS leasing framework have been grandfathered and may remain in effect for up to fifteen years, so long as such leases are not materially changed.
>
> EBS licensees must adhere to the following substantive use requirements, which are designed to maintain the traditional educational purposes of ITFS:
>
> - There must be a minimum of 20 hours per 6 MHz channel per week of educational use of EBS spectrum.
> - For analog facilities, EBS licensees must retain a right to recapture an additional amount of 20 more hours per channel per week capacity for educational purposes.

- For digital facilities, the EBS licensee must reserve at least 5% of its transmission capacity for educational purposes.
- The EBS licensee must retain responsibility for compliance with FCC rules regarding station construction and operation.
- Only the EBS licensee can file FCC applications for modifications to its station's facilities.
- The EBS licensee must retain some right to acquire the EBS transmission equipment, or comparable equipment, upon termination of the lease agreement.

*2. Explore the potential of selling or leasing the State's and the University of Maine System's excess broadband capacity when the analog channels become digital channels*.

Response:

The UMS is the only licensee of statewide EBS spectrum in Maine. Excess capacity of this spectrum would be made available for leasing if the UMS digitizes the ITV transmissions. Excess capacity would also be made available if the UMS ceases ITV transmissions in this spectrum, provided that educational content is delivered over each of the licensed frequencies.

The spectrum's current value is uncertain as there is no large company interested in the channels. Sprint and Clearwire have just completed a merger and are not interested in the lower population markets, such as Maine, at this time. However, smaller local or regional companies may want this spectrum for more immediate uses such as point-to-point backhaul of data services. The stakeholders group discussed spectrum leasing options. Leasing to smaller companies might produce quicker returns, generate opportunities for local service providers, and potentially expand Maine's broadband capacity faster. Leasing to nation-wide providers, could produce larger returns and provide more ubiquitous wireless service. A combination of leasing to both types of providers is possible. Some thought should be given to the value of having enough contiguous capacity available to nation-wide providers so that Maine would not be excluded from a carrier's nation-wide network. Currently, however, we are unaware of any companies, large or small, that are interested in a potential lease.

Previous contacts from commercial companies regarding leasing provide limited valuation information. In 2006, company A (name and details are confidential) provided an unsolicited proposal to lease three channel groups in the Portland and Lewiston area for $650K upfront and $7,000 per month. For the entire available spectrum, Company B, under non-disclosure, offered between $1M and $3M upfront with monthly payments between $20,000 and $45,000. Company C offered $1.5M upfront and annual payments of $200K per month. A valuation study (which has limited life due to the fluctuation in this market) could be done for $40,000. Such study would weigh in the following factors: population covered, market size, density, growth, competition, and spectrum position (channel groups have different values).

*3. Review what other states and educational systems have done in this situation in order to find ways to save the state budget allocations from the General Fund and to see how these types of savings can be done on a statewide basis. The stakeholder group shall pay particular attention to the Milwaukee, Wisconsin educational system's sale of broadband valued at $12,600,000, with estimated additional earnings of $108,000,000.*

Response:

Our review of other states and educational system activities revealed that the level of involvement of state legislatures varied greatly from state to state. Contacts with public higher educational institutions in Hawaii, California, and Michigan revealed that the legislatures in those states had no direct impact on the funds that have been generated by leasing spectrum. As in most states, EBS licenses are held by local institutions and not by a state-wide university system. In these instances, educational institutions have used the funds solely to increase the services they provide. However, three states have taken legislative actions: Nebraska, South Carolina, and Vermont. Attached is a summary of legislation. It is also noteworthy that the Vermont State Auditor reviewed the Vermont State College's lease of three licenses and found that, though they didn't violate regulations or policies, they leased without a bid process, valuation, nor outside legal counsel. This may have resulted in revenues of less than half of the potential.

In Milwaukie, the spectrum was leased from three license holders: University of Wisconsin-Milwaukee, Milwaukee Public Schools, and Milwaukee Area Technical College. This lease generated significant revenue due primarily to the population and population density. With initial payments of $4.2 million for each of the three institutions ($12.6M total), and monthly payment of approximately $55,000 (with annual increases) for the 30 year lease, for a total payout of about $36 million ($108M total), the present value of their total revenue stream is approximately $20 million for each institution for the 30 year period ($60M total). Such revenues will allow UWM to fund undergraduate scholarships, technology infrastructure, and regional campus development.

*4. Investigate the University of Maine System's plans to negotiate a contract for its excess broadband capacity.*

Response:

The UMS, at the recommendation of counsel, has decided not to issue another RFP until a plan to self-transition to digital service has been filed with the FCC. At that time, the UMS will investigate options to seek proposals or perform an auction to lease the spectrum. The current instability in the credit market may also make this an inopportune time to issue to issue an RFP. The window for filing self transition plans is January 21 – April 21, 2009.

Given the uncertainty, the stakeholder group discussed the idea of an advisory group or panel containing a number of "outside" or non-UMS members with specific marketing and technical expertise to work with UMS going forward with the goal of obtaining the most profitable result.

The stakeholder group also discussed whether the excess capacity was a public resource managed by a state agency (UMS) or an asset of UMS. Consensus was not reached on that issue, but it was agreed that further discussion would guide future decisions on the negotiations.

Sincerely,

Phillip Lindley
Executive Director

cc: Members of the Utilities and Energy Committee
Lucia Nixon, Legislative Analyst

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# State Bills Relating to Excess Spectrum Capacity

**Nebraska**

NE L.B. 1208
*Approved by Governor - 04/11/2006*
Sec. 24. Section 79-1319. Requires that all telecommunications facilities operated or supervised by the Nebraska Educational Telecommunications Commission be operated on a noncommercial basis. Provides for revenue generation through contractual arrangements involving excess transponder capacity, excess transmission spectrum, or transmission and production facilities. Requires that all lease contractual arrangements be based on sound business principles that are made in the best interest of the state.

**South Carolina**

SC H.B. 3569 (Act No. 169)
*Signed by Governor - 06/14/2007*
Directs the South Carolina Broadband Technology and Communications Study Committee to make recommendations to the General Assembly regarding how to best lease the excess capacity of EBS licensees. Prohibits the lease of excess capacity prior to approval of the recommendations of the study committee. Authorizes EBS licensees to lease excess capacity upon approval by the General Assembly, and in cooperation with the Division of the CIO. Requires contracts to be awarded by competitive solicitation in accordance with the South Carolina Consolidated Procurement Code. Requires the committee to recommend how best to utilize the funds received. Mandates that the committee consider whether the funds should be used to offset the costs of broadband service for qualified low-income subscribers, whether the licensee or other state entity should receive all or a portion of the funds, or how any other use of the funds could benefit the State. Specifically eliminates the committee's authority over the broadband assets of the University of South Carolina-Columbia, Clemson University, and the Medical University of South Carolina.

SC S.B. 1077 (Act No. 208)
*Signed by Governor - 05/13/2008*
Exempts EBS licenses granted to the Greenville Technical College and Trident Technical College from the state Procurement Code. Prohibits these institutions from imposing any pricing requirements on third parties who might lease spectrum capacity. Requires that any lease agreements be designed to ensure that these institutions receive the market rate for the spectrum capacity.

SC H.B. 4800 (Act. No. 310)
*Relevant section of the Appropriations Bill vetoed by Governor, veto overridden by General Assembly - 06/04/2008*
Part IB, Section 19.4 Requires the Education Television Commission to use a competitive process to obtain proposals from commercial entities for the leasing of the excess spectrum capacity of the EBS licenses held by the South Carolina Educational Television Network. Directs the commission to seek

proposals that utilize the excess spectrum capacity in the following manners: (a) a single lease of ETV's excess spectrum capacity without any service requirements; (b) a single lease of ETV's excess spectrum capacity with service requirements as recommended by the commission; (c) multiple leases on a regional basis without any service requirements, such regions to be determined by the commission; (d) multiple leases on a regional basis with service requirements as recommended by the commission, such regions to be determined by the commission; and (e) other manners deemed appropriate by the commission. Requires the commission to consider whether to include any lease of tower space in the proposals in the lease of excess spectrum capacity. Directs the commission to consider the costs and benefits, both monetary and societal, in determining any service requirements to impose on potential lessees. Prohibits the commission from imposing pricing requirements on lessees and requires the commission to take steps to ensure that state assets are not used to subsidize a private company's competitive service offerings. Outlines procedures for proposal evaluation and approval. Requires the South Carolina Education Television Network to ensure that ETV complies with any FCC rules or requirements. Terminates the commission six months after all agreements are finally executed, but no later than June 30, 2010 and provides for the Budget and Control Board to assume responsibility for the management and administration of all resulting agreements.

SC H.B. 4735 (Act. No. 405)
*Signed by Governor - 05/27/2008*
Creates the South Carolina Educational Broadband Service Commission to obtain and evaluate proposals from commercial providers to lease excess spectrum capacity licensed to the South Carolina Educational Television Network. Outlines a process for lease approval. Exempts the leases from provisions of the consolidated procurement code.

**Vermont**

VT H.B. 248 (Act. No. 79)
*Signed by Governor - 06/09/2007*
Authorizes the Vermont Telecommunications Authority to own, acquire, sell, trade, and lease equipment, facilities, and other infrastructure that could be accessed and used by multiple service providers, the state and local governments, including the wireless spectrum of frequencies. Requires that any agreement to sell infrastructure that can be used by more than one service provider contain conditions to ensure the continued shared use or co-location at reasonable rates. Prohibits any instrumentality of the state from selling, leasing, or otherwise divesting itself of ownership or control of radio frequency spectrum without prior notice to and approval of the authority.